

Annual Meeting of the Board of  
Governors  
of the  
International Association for Prevention  
of Blindness

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PARIS, FRANCE, NOVEMBER 19, 1932

THE INTERNATIONAL ASSOCIATION  
FOR PREVENTION OF BLINDNESS  
66, Boulevard St. Michel, Paris, France

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# International Association for Prevention of Blindness

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Annual Meeting Held in Paris on November 19, 1932

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This Meeting was held on Saturday, November 19, 1932, at 66 Boulevard St.-Michel, Paris, under the Chairmanship of Professor de Lapersonne, in the presence of Mr. Justin Godart, Minister of Public Health. Mr. de Monzie, Minister of National Education, was represented by his First Secretary, Mr. Abraham. H. R. H. the Duchess of Vendôme, Member of the Honorary Committee, was represented by Mademoiselle Szymanska de Slepovron.

After the President's address, the meeting was exclusively devoted to a study of the most important subject of Sight-Saving Classes.

## Report by Prof. de Lapersonne, President

Sir: Among the important public health problems to which you devote your valuable time, you have always taken a special interest in all questions connected with the conservation of vision. You have recently given us a new token of this interest in accepting the Chair at the Fiftieth Anniversary of the French Society of Ophthalmology. We beg to express to you our most earnest gratitude for the honor bestowed by your presence upon the youthful International Association for Prevention of Blindness, and for your appreciation of its highly philanthropic and world-wide ideal.

I beg the Representative of the Minister of National Education to convey to the Minister our grateful thanks not only for his valuable support in decreeing that a sight-saving class shall be established in Paris, but also for deputing to this meeting his First Secretary, who is one of the most distinguished members of the teaching profession in secondary schools.

Ladies and Gentlemen: For the third time since the creation of our International Association I have the honor to describe briefly to you

the work done and the results achieved during the past year. I hope they will justify the trust you have placed in us. Under the present critical circumstances our Association is not only holding its own but is making constant progress so that we may look forward to the future with confidence.

Our presence here is a token of its vitality and of the powerful support which enabled it to overcome difficulties in this early stage of its career. We have had, in fact, to organize our Secretariate along new lines, since the League of Red Cross Societies, which had, until last year, placed its staff and premises at our disposal, has withdrawn this collaboration. Thanks to the National Committee for the Campaign against Tuberculosis, for whose kindness I wish to record here our appreciation, we have been able to establish our Secretariate on a new and quite autonomous basis. I am happy to add that our Association has remained on very good terms with the National Red Cross Societies who had granted us their patronage.

The Association's Secretariate has carried on the following program: propaganda, which is our most important task; the financial campaign, intended to secure for our work the resources necessary to its life and progress; promoting the activities of national committees, on which rests the future of the Association.

We have published and widely distributed the accounts of our Annual Meeting, the French edition of which appeared in the *Archives d'Ophthalmologie*, while the National Society for the Prevention of Blindness kindly undertook to publish the English edition at its own expense. The admirable pamphlet edited by Mr. Louis Forest, entitled "Save Your Eyes," has been distributed by thousands in France, in the French Colonies and in other countries. We have received, from several quarters, comments expressing warm approbation of this fine piece of work. Dr. Wright, a leading ophthalmologist in Madras, stated that a similar pamphlet, adapted to conditions in India, would be of invaluable help; he added that to start, a million copies in several dialects would be needed.

The Bulletin of French Industrial Firms against labor accidents, with a circulation of 5,000 copies, has published the results of our enquiry on eye accidents in industry.

With the collaboration of the well-known expert, Mr. Viborel, we have organized a propaganda week during which the program of our Association has been explained by radio talks and by publicity in the daily press.

The financial campaign, as you will readily believe, started this year under peculiarly unfavorable conditions; this was all the more serious since our Association, owing to the change in the organization of the

Secretariate, had to meet increased expenses. I am happy to be able to say that, thanks to the generous support we have received, we were able to balance the budget without encroaching on the small reserve fund gathered during the first two years of the Association's existence. I beg to express here my warmest thanks to the Minister of Public Health who kindly increased the subsidy granted to our society, a subsidy which is the more valuable because of the official approval it involves. The National Society for the Prevention of Blindness in the United States has again, this year, in spite of the difficulties which that great country is experiencing, doubled all subscriptions collected in Europe. We beg Mrs. Hathaway, Associate Director of this Society, who has undertaken a long journey to attend our meeting, to convey to her colleagues our sincere gratitude.

In Germany, Dr. Feilchenfeld has published, in the *Review* edited by Prof. von Szily, a well documented paper on the causes of blindness and the preservation of sight in his country. We have the honor to have among us to-day Prof. von Szily, of Münster, member of our Executive Committee, and Prof. Bartels, of Dortmund, whom we are happy to welcome. The latter will presently lay before you the fine results obtained in Germany by the sight-saving classes.

The classification of the causes of blindness is a favorite subject also with our British colleagues. Dr. MacKay of Edinburgh has sent us a very thorough account of the registration of blind people in Scotland.

Dr. Lossouarn, the former President of the International League for the Prevention of Blindness in China, who is now back in France, informs us that two of his pupils, the Chinese physicians Tien Ta Win and C. S. Wu, are carrying on his work. They were able to collect almost 100,000 francs in China this year and they hope to be able to open a small hospital and dispensary at Tien-Tsin.

In Italy, on the suggestion of the National Committee for the Preservation of Sight and of its Secretary General, Prof. Maggiore, the Minister of National Education has issued a circular on eye hygiene for elementary schools. We beg to remind all national committees of the importance of securing the co-operation of the teaching profession, which is so influential and which may provide us with the most valuable collaboration.

In France, the French Committee has carried on the work undertaken for the conservation of vision in schools and industries. Dr. Coutela's report on minor eye injuries was distributed to all members of Parliament, in order to draw the Government's attention to the necessity of altering the Act of 1917 on behalf of the victims of these injuries.

My eminent colleague, Dr. Terrien, Professor in Clinical Ophthalmology

at the Faculty of Medicine of Paris, has included in the agenda of his lectures a course in ophthalmological prophylaxis for doctors who are interested in public health and child welfare problems.

We feel that for our Association the period of uncertainty and tentative endeavors is drawing to an end and that the era of realizations is beginning. This is why we have invited you to-day to consider a subject of vital interest and immediate practical significance: the establishment of sight-saving classes. You will hear the views of the most distinguished experts of both continents. It is a truly international problem: in all countries the school population includes a number of children with defective eyesight. I hope and I trust that the important conclusions reached will contribute to improving their condition.

We have but few modifications to suggest in the constitution of our Committees. In consequence of the death of the late Prof. Lundsgaard (Copenhagen), one of the founders of our Association, who helped us with his valuable advice in drawing up our by-laws, we have invited Prof. Henning Roenne, who succeeded him in the Chair of Ophthalmology of Copenhagen, to represent the International Association in Denmark. He immediately expressed his appreciation of the honor conferred on him and promised to promote the work of the Association. He regretted that his professional duties prevented him from attending our meeting. We propose that Prof. Roenne be elected a member of the Executive Committee.

Finally you will join us in honoring the memory of an eminent member of our Honorary Committee, General Pau, Chairman of the French Red Cross, who so kindly bestowed upon our society the prestige of his name and the support of the French Red Cross. His successor, the Marquis de Lillers, has agreed to grant us his high patronage, for which we beg to express here our sincere gratitude.

## Sight-Saving Classes

Prof. Pierre Villey

Secretary General of the Valentin Haüy Association

I am indeed delighted to attend this meeting as I feel convinced that it will be followed by practical results on behalf of a cause which I know to be a good cause and one which I have endeavored to promote for the past few years.

My confidence is based on the fact that this cause is now upheld by a person whose character we honor as much as we admire his science: Prof. de Lapersonne has seen in this cause a duty to his country; and when

it is a matter of serving his country—and through his country, humanity—we know that Prof. de Lapersonne spares neither his authority nor his labor.

My confidence is further increased by the fact that the Minister of Public Health is with us. We beg to thank him most cordially for his presence. It is a valuable pledge.

Finally, I feel confident because there are many ophthalmologists present. When they have heard the results obtained, thanks to sight-saving classes in England, in Germany, in the 400 classes in the United States, they will see the necessity of organizing such teaching in France. They will feel it is unmistakably their duty.

Presently the question of sight-saving classes will be laid before you in connection with the prevention of blindness. As specialists, you are interested in this aspect of the question. I do not need, however, to make excuses for looking at the subject from a different angle: the moral, pedagogical and social standpoint. You are also specialists in these aspects of the problem. It is the honor of your admirable profession that working very near the soul—you touch it through the eye—you can never quite forget it.

When will all ophthalmologists realize that when they can no longer help a patient through their art, their task is not yet over? When will they realize that an imperative duty still lies before them; that they cannot humanely abandon this soul which their verdict, whether open or tacit, will reduce to despair? They must show their patients the way to salvation through re-education, through braille, through work, through organizations whose aim it is to assist the victims of blindness. Think how the task of those who look after the blind would be made easier if everywhere we could secure the collaboration of ophthalmologists.

Have you read the fine novel by Paul Margueritte, "The Other Light"? It was written during the war with the object of bringing some comfort to all those fine young men whom, in the prime of their youth and of their hopes, a senseless bullet had thrust forever into darkness. Claude Chartrain, the hero, is one of those idle society men who let their moral energy lie fallow. In the midst of the festivities and pleasures of which his daily life consists, a hunting accident brutally deprives him of his sight. Exclusively preoccupied so far with his car, his horse and his gun, he is the very last man prepared to receive a visit of misfortune. And around him he finds no better resources than in himself. His betrothed, a society member like himself, at once deserts him; his people are convinced that a blind man is no better than a feeble-minded person, and can only be an intolerable burden to his relations. One of his friends

says to him, "In your situation, poor beggar, the only way out is to shoot yourself."

And do you know to whom Paul Margueritte entrusted the moral salvation of this man? To the oculist who was called in after the accident: Brissage. In the novel, Brissage is a member of the governing board of a great organization for the welfare of the blind, the Valentin Haüy Association. It is Brissage who points the way to a new life to the poor human rag that the blind man has become; it is Brissage who mentions the Valentin Haüy Association and its methods; he it is who instructs the family as to what they must know in order not to root out the tender plant of regeneration; it is he who divines in Claude's uncle the spirit of self-sacrifice which will be his salvation, and foresees the love of Thérèse and the beneficial work in which Claude Chartrain will perceive the dawn of another light.

Please do not say that I have wandered away from my subject. I would not admit it. For the partially sighted as well as for the blind there is an agonizing moral problem; an oculist conscious of his duty must know about it. The misfortune of the partially sighted is that, although he is often as much handicapped as the blind, he does not call forth that pity which is so generously lavished on the blind. A great deal is done for the blind; nothing is done for the partially sighted. He is forgotten. He longs for his share of human happiness; he would like to have a home, to bring up children; and he is out of work. He applies for help. Society asks him, "To what extent can you see, my friend?" He replies, "Perhaps two-tenths." "Two-tenths, but then you can find your way; you are not blind; you have no rights . . . ."

We have not even provided a school for him. Do let us at least provide him with a school where he can learn to do the work which is suitable for him. He did try to attend the ordinary school, but he could not see what was written on the blackboard. He was given glasses, placed in the front row. He still could not follow. What happens is that his eyesight gets tired in attempting to read the fine print of school books. He develops headaches. He becomes lazy. He gets used to remaining inert in a corner of the classroom. You cannot expect the teacher, with our overcrowded classes, to pay special attention to him. One day the teacher says to him, "My child, you are doing harm to your eyes; you must go to the school for the blind." At this his mother gives a start as if under the blow of an insult. A friend intervenes: "On no account must you go there; you would be taught braille; instead of learning it by touch, you would insist on using your eyes and nothing is more fatiguing to the eyes than attempting to read those small raised dots. You will

ruin what small amount of sight you still have. Moreover, you will not be in your proper environment. You will be taught a blind man's occupation and not the work you are able to do. On no account should you go there." And the poor child has had no instruction. Morally, the partially sighted child is deserted by society.

Yet from the pedagogical standpoint, the school we are asking you to build and which will make up for this moral desertion, involves no complicated problems. If we were asking for a boarding school the solution would be expensive. We are merely asking for day schools, and only in large cities where a sufficient number of these children can be gathered to form a class. There is approximately one child out of 500 or 700 who needs this form of education. Therefore a city school population of 6,000 to 8,000 children ought to have a sight-saving class for a dozen pupils. It is a pity not to provide for partially sighted children who live in rural districts. However, there are in the country open air occupations which are usually quite suitable for them.

As to pedagogical methods to be applied in special classes, they are simple. The books must be printed in large type, with well-marked pictures in bright colors and a text which is easy to read; geographical maps must be adapted to the needs of the children in these classes; writing is done with thick chalks on blackboards, or with very black, soft pencils on dull white paper. In America, special typewriters with large letters are used. Naturally the lighting must be even more carefully regulated than in the ordinary schoolroom. The children must not lean over their desks, and violent games should be avoided. None of these things is very hard to grasp.

I have no doubt that we shall readily find and almost without any special preliminary training, teachers for these classes. You must not mistake my meaning: I repeat *almost* without preliminary training. Common sense only is needed to understand that reading and writing exercises in such schools must be very brief and frequently interrupted. Some self-sacrifice is required of the teacher to make up, at the cost of personal effort, by oral teaching, for the deficiency of written lessons. All this is a matter of self-denial. Teaching in these classes must be essentially personal. This means that they must include a small number of pupils and that only the teacher who takes pains will be a success. But, in spite of a few noisy manifestations which deceive people who are not acquainted with the real spirit of our teaching profession, self-denial is quite frequently encountered in our old University. Mr. de Monzie, who has kindly sent a representative to our meeting will have no trouble in finding the teachers we ask for.

Finally, appropriate education is the key to social rehabilitation. If you establish sight-saving classes for these children they will be able to hold their own in society. Gathered together, under proper supervision, they will learn the way to conserve their own vision. They will receive vocational training adapted to their degree of vision. Vocational training is indeed essential. They must not be taught a profession suitable to the normally sighted; even if they seem able to perform such an occupation to-day they will wear out their eyesight and, on the first sign of alarm, they will find themselves out of work.

Nor must they be trained in occupations suitable for the blind; they would overcrowd them to the detriment of the truly blind. Moreover, these occupations are usually second-rate and badly paid; people with defective vision will not derive from them the social output they may justifiably expect.

Suitable professions are gardening, book-binding, shoe-making, especially joinery; this applies to boys. For girls: florists, private servants—generally speaking they can do most housework, excepting, however, the laundry; in the latter the condensation of steam on the glasses of the weakly sighted deprives them of their ability to see.

Experience acquired in the school, and the doctor's advice, will point out in each case the best line to be followed.

Our partially sighted children are now adapted, at any rate on paper. They must soon be so in reality, namely socially.

What they lack is recognition; no one knows them; they have no social existence. The common point of view is that one is either blind or normally sighted. What these people lack is perhaps a name. We are all grammarians; it is by means of words that we classify our thoughts. There is, of course, the word "amblyopia." For physicians, amblyopia is quite good enough. But can you imagine yourselves entering a drawing-room and saying to your hostess, "Madam, it would be very good of you to take an interest in amblyopes"? Among those ophthalmologists who are listening to me, there are grammarians: I submit this point to them; they would do a very good turn to my clients in finding a name for them.

I must stop so that you may learn about our schools abroad—I say "our schools" as we are dealing here with a human problem which knows no frontiers—not theories, but facts and figures which will convince you of the necessity to act at once.

## Sight-Saving Classes in England

N. Bishop Harman, M.A., M.B., F.R.C.S., LL.D.

Honorary Member, International Association for Prevention of Blindness

**The Difficulties of Standardized Schools.**—The demand for some scheme of education suitable for children suffering from a defect of vision is a very natural one. It is bound to arise when education is made compulsory for every child; it is also bound to arise because no one scheme of education will cover all cases. The curriculum of any school is designed for the greatest good of the greatest number. Misfits must suffer because either they are incapable of taking advantage of the education provided, or the scheme would be injurious to them if their full attendance were insisted upon. This was early recognized in the case of the blind, and special education was provided. There has been no lack of generous efforts by intelligent and sympathetic people to found schools where the blind could be trained in such arts and crafts as would fit them for some place in the national life. Of work for the prevention of blindness and for the help of the unfortunate blind there has been no lack.

The duty of inspecting children in the schools for the blind maintained by the London education authority first brought home to me, however, the disabilities of those children who were neither blind nor well sighted, and for whose education and training there was no appropriate provision. They received no proper education, since they either idled in the ordinary school or were left to run the streets, or were trained in the blind school, which was equally bad for them. When I first worked out the incidence of blindness in these schools I found no less than 6 per cent of children were myopes who were not blind, and would probably never become blind. That experience led me to voice their grievances in a paper read at the Second International Congress of School Hygiene held in London in 1907. I protested that it was not only a waste of public money, but injurious to them that they should be taught with blind children.

By great good fortune the chairman of the Section at which the paper was read was a member of the Education Committee of the London County Council, Miss Adler. Her interest was engaged, and the next year—1908—the first experimental class was started with the backing of Dr. James Kerr, the school medical officer, and of the school teachers. The official report on the first year's working closed with the words: "It seems to be such a success as to warrant the opening of other centres for the same purpose." There are now thirty-seven classes in fifteen

centres in London with a roll of 850 children; also 100 places for myopes in five schools for higher education. There are classes in nearly all the large towns in England and Scotland, in some other countries of Europe, in Canada, and some hundreds in the United States of America. When in Canada in 1930 I learned how rapid had been the advance in the provision of sight-saving classes in the States and how favorable the method had become in the eyes of educationists and ophthalmic surgeons. In this paper I will survey our experience in London during the past twenty-five years; time enough to permit a fair judgement of the worth of these classes.

**The Children.**—Any child who can see but yet cannot see the normal average of the test types at the proper distance is short-sighted in the general sense of the term. Many cases of short sight can be corrected by glasses, and if the defect is not of a serious order the child will be found to be capable of joining in the ordinary school work. If the defect cannot be relieved by glasses, or when susceptible of correction is of such a serious nature that the ordinary form of class work would be injurious, then some special provision must be made. This provision is the "myope class," so called in England because most of the children in these classes are myopes. The term "sight-saving class" came from America. For a time I was dubious about its use; the succession of sibilants is unpleasing, but the chief objection lay in the claim which the term set up. Could it be justified? It confessedly had a distinct value when dealing with dubious parents: those who were inclined to demur to their child being transferred to a "myope class" readily agreed when it was called a "sight-saving class."

Examining the records of a large number of children who have been in the classes, I find that the eye defects fall into three groups, according to their nature:

|                                       |                 |
|---------------------------------------|-----------------|
| Myopia . . . . .                      | 62.62 per cent. |
| Damages due to inflammation . . . . . | 30.35 per cent. |
| Congenital defects . . . . .          | 7.03 per cent.  |

Briefly, some two-thirds of the children are high myopes and one-third have damaged or imperfect eyes. The sight-saving classes would be wholly justified by reason of the provision which they make for the latter. Such children are under far happier conditions than in the ordinary school. The individual attention they receive enables them to make advances that are impossible when they are lost in a crowd of healthy, active children, and the care exercised is definitely beneficial to those who have suffered many relapses from keratitis. It is true that the presence of these children, and especially of those with congenital defects

of the eyes, complicates the curriculum, since they are not up to the same standard of intelligence and capacity as the myopes. Also their presence reduces the popularity of the classes in the eyes of parents, who are apt to resent the association of their own children with "defectives." But these difficulties are reduced with the increase in number of the classes and the possibilities of classification.

Since the greater number of the children are high myopes the classes must be judged by the services which they render to these children. First, let it be made clear that the classes are not based on any theory of myopia; they are based upon the necessity of meeting, as satisfactorily as we can, a heavy handicap, which tells seriously against the chances of a fair start in life. Myopia may be the product of several causes—heredity, congenital defect, illness, bad social conditions, and too much close eye work. The last two we can deal with. Social conditions are definitely improving, and it is our duty to control such eye work as must be done in school. Personally I have no doubt of the injurious effects, in susceptible children, of prolonged close eye work, and that this is a cause or an aggravation of myopia. Also I am sure, on such evidence as I have, that the control of eye work is beneficial to myopes. I have observed the progress over long periods of a group of 300 children. The results have been published and compared with those recorded by Priestley Smith. There was some advantage for my cases, but I admit that there is, and can be, no sufficient "control" of any such observations. Much more to the point are such facts as have been recorded through school medical inspection in Sweden. In that country improvement in hygiene and in school lighting, the abolition of the old Gothic type in favour of Roman, and the increase in outdoor sports have been followed by a reduction in the incidence of myopia which is remarkable. That the regulation of close work is a material factor in that reduction is evident, since Dr. Hogarth states:

"There is a 20 per cent greater decrease on the modern as compared with the classical side. Classical studies require closer attention to books, and entail the more frequent use of dictionaries, which are generally printed in small type. Greek especially presents a form of lettering entirely new to a pupil, and requires very close concentration."

The report of the oculists who served on the British Association Committee is, I think, fully justified:

"Myopia, or short sight, commonly depends on undue elongation of the eyeball. It is never, or hardly ever, present at birth. It is rare at 5 years of age. It usually begins during school life, and increases more or less from year to year during the period of growth. It sometimes

continues to increase after growth is completed. It is not necessarily or always associated with over-use of the eyes, either in school or elsewhere, for we see it arise after illness, we meet with it in illiterates, and we know that the predisposition is strongly hereditary. But it is everywhere most frequent among the studious, and there is a mass of evidence to show that it depends very largely, both in its origin and in its progress, on over-use of the eyes in near work."

There is also evidence of the injurious effects of close work in adult life. Out of a series of 480 myopes of over 3 D between the working ages of 20 and 60 years no less than 53 per cent of those engaged in close work came to a time when there was an unmistakable failure of ability, to carry on because of serious eyestrain, and this number included 15 per cent who suffered damage to their eyes. When grouped according to degree of myopia the following results were obtained:

Myopia 3 to 5 D—breakdowns 33.7 per cent; 5 to 10 D—breakdowns 66.5 per cent; over 10 D—breakdowns 77.4 per cent.

Of those who were not engaged in continuous close work, only 9.4 per cent experienced a critical failure of capacity owing to eyestrain or disease. There is cumulative evidence that myopia is often started and is frequently aggravated by too much close eye work. We are therefore fully justified in checking these habits in susceptible adolescents, and in diverting their attention to ways of life that will spare their eyes.

**Standards of Vision.**—The popularity of the sight-saving classes in England has led to increasing demands by parents and ophthalmic surgeons that children who are educationally blind should be admitted to them. One can sympathize with the desire to refrain from labelling a child "blind," but if the work of a sight-saving class is to be effective—that is, if it is to be carried on by teaching the children through their eyes as well as their other senses—then they must have sufficient vision for the purpose. At first the standard set was 6/18 with glasses. It was soon found, however, that many with worse vision than this could join satisfactorily in the classes. Beneficent legislation in the interests of the blind made it imperative that only children who were blind or who were likely to become blind, for economic purposes, should be admitted to the blind schools. This had its effect on the sight-saving classes; those who were excluded from the blind schools were admitted to the sight-saving classes. But when vision is less than 6/24 it is very difficult to prevent children peering and groping at their work, and the bad habits of a few will be copied by the many. I am frequently asked what degree of myopia indicates the necessity for admission to a sight-saving class. This should always be related to age; an infant of 5 years

with 5 D of myopia, especially when there is evidence of increase of the defect, certainly needs special treatment. On the other hand, a child with 7 D who is 13, and shortly due to leave school, may well be left in the ordinary school under special supervision and exemptions as regards work.

**Position in the Educational Scheme.**—At the outset the classes were definitely linked with the ordinary schools, and, so far as possible, the myopes did some oral work with the normal children, the idea being that there should be no suggestion that the children belonged to a class of “defectives.” The linkage worked well; but there have been difficulties. The fashion of teaching in the ordinary schools has changed; “individual study” is now the vogue. Children are expected to prepare work by themselves, which means much book reading. Except, therefore, for the connection of the myopes with the communal life of the ordinary schools, the gain in the linkage has been lost. Also the natural tendency of enthusiastic teachers to think highly of their work led them to strive for classes to be grouped into definite self-contained entities or schools. Accordingly schools with several classes have been established. There were advantages in that the children could be better classified and the teachers specialized in their work. But there were disadvantages. The children were segregated, and to this the parents objected. The grouping of classes meant fewer centres geographically, so that children often had further to travel—this was bad for those with scarred eyes—and finally, the system has proved more expensive. This last drawback bids fair to cause a reversion to the original plan of having separate or, at most, two classes connected with an ordinary school.

The number of children who need this form of teaching is important. The most recent return for London shows that, out of 570,000 pupils in the elementary schools, there are 850 places in the sight-saving classes. To these should be added about 100 places in the myope classes in the higher education schools. This gives a total of 950 places, or about one sight-saving place for every 600 school children. Notwithstanding this provision, there are many high myopes retained in the ordinary schools, either because there is no sight-saving class near their homes or by reason of their age. We may therefore estimate the need as not less than one sight-saving place for every 500 school children. Estimates from the United States agree with this figure.

**The Class.**—The scheme of work is founded on common sense principles. It is a return to primitive methods such as must have existed among our forefathers, when the wise one of the tribe taught the traditions of the fathers to the children, initiated them in the secrets of craftsman-

ship, and showed them how to make the tribal marks upon the walls of their huts and caves. There, in brief, is the scheme of the myope class. It is essentially personal, and lacking in that modern substitute for personal teaching, the book. Details of the curriculum will differ in different countries, but the general plan is the same. The work has three sides: (1) oral teaching, (2) written work, (3) handicraft. The classroom has one prime necessity—perfect natural lighting. Artificial lighting for these rooms is a negligible consideration. All work, other than suitable exercises, oral lessons, and games, should be suspended immediately artificial light is needed. The ordinary school desk is unsuitable; special ones have been designed having a full-sized blackboard suitably sloped, which can be converted by a movement into a horizontal table. A band of blackboard is fitted all round the walls of each room, at such a height that both teachers and pupils may use it. There are also continuous black screens fitted to rollers, like jack-towels, for extended vertical work.

It is a great benefit to myopic children if their oral lessons can be taken, at any rate to some extent, with the normal children. Their presence in the normal school has not been found a drawback, and the advantage to the myopes is great. In the myope class oral teaching should be developed as much as possible. It requires thought and intelligence on the part of the teachers, but they agree that it adds zest and interest to their labors. When an oral lesson is completed, either in a normal school or the myope class, the written work should follow. The lesson is written out from memory on the blackboard, and the children are then questioned on it. Arithmetic is similarly practiced on the blackboards, teacher and children working together, each on his own board. Special attention is paid to mental arithmetic, which facilitates the association in the mind of ideas of numbers without the adjuvant written symbols. Further, arithmetic is associated with practical work in handicraft. In the higher standards the need is felt for some permanent record of work. Exercise books consisting of large paper sheets are used; these are clipped to the blackboards and written upon with black crayon, free-arm fashion. The older pupils are encouraged to make permanent records of their work by printing. Rubber-faced types mounted on wooden blocks convenient for handling are provided, and over the paper on which the print is to be made are ladder-like frames, which give the necessary alignment and spacing. The record is permanent, and forms a class library of large paper books which is invaluable for teaching purposes.

Oral teaching is greatly enhanced by the use of models, objects of

interest, and pictures. Some teachers felt that the optical lantern and the epidiascope would be of assistance to them, and the idea was put to the test in a series of lessons illustrating world-wide food production. The subject matter of the lessons and the pictures were excellent, but the lantern show was a failure; the children did not see well enough to appreciate it. That this must be so can be demonstrated by putting spectacles fitted with +3 D lenses before one's eyes: the sharpest pictures will be so blurred as to present little attraction. Further, there is no doubt that the brilliance of the screen in a darkened room is a source of fatigue to myopes. The use of the typewriter was similarly advocated for these classes. As a means of writing it is definitely less fatiguing than the pen, but, unfortunately, habits of thought amongst elementary school children and their parents are such that the use of the typewriter is linked with a future clerkship, a wholly unsatisfactory employment for a high myope. Typewriters are therefore not used in the myope classes connected with the elementary school.

Periodically there have been attempts to introduce printed books into these classes. Some educationists have urged that the loss of books is a serious handicap to the children; it has been said that the mental age as shown by Binet-Simon and similar tests is indicative of this. It may be admitted that these children average a year or so below age standards. This is due to the presence of children with scarred and defective eyes; the former have been ill and absent from school, while the latter rarely attain normal standards. Most of the myopes are up to the average. The admission of books, even of the best printed large type, will not raise the general average, and from the medical point of view it is undesirable. The medical aim is to secure a good education for the children with the least risk, and at the same time to cultivate a life habit of *not* reading.

**Handicraft.**—Handicraft occupies a different place in these sight-saving classes from that which it holds in the normal or in the blind schools. In the normal school it is a sideshow, of great interest to the children, but not counted as part of the serious work of the school. In the blind school its position is the antithesis of this: it is the main feature of the curriculum. The schools for the blind strive, from the outset, to make the child an efficient worker. Without sight, craftsmanship is doubly difficult to learn and to carry on; hence the attention given to the early and continuous training in what will be the blind child's means of livelihood.

In the sight-saving classes handicraft is not taught as an apprenticeship to a life-long work. It is to the sight-saving class what Latin is to the

public school—the one great training in care, precision, and control, and, I venture to think, a better one than Latin can ever be. The provision of a suitable and varied scheme of work is by no means easy. Consideration has to be given not only to the practicability of the work for classroom equipment, but also to its educational value and to its effect on the eyes. By the assiduity of teachers in the London classes a scheme of work has been drawn up which has proved of great value. It is not put forward as canonical; it is the outcome of the needs and experience of both teachers and children. Details vary as local conditions vary, and for this reason I do not propose to set out the scheme in full. But the principles of the scheme may be outlined.

Handicraft has value in two directions—first, in training hand and eye, and secondly, in cultivating “association.” Through handicraft the good teacher can impart something of history, of arithmetic, of geography, or of languages. In all our mental work there is some form of association. The written statement or the figured sum presents an association between symbol and idea. Most of us when calling up a memory see the incident, or the page of the book, or the written letter, as with our bodily eyes. In these sight-saving classes another association is taught—one that is certainly better for children whose eyes must be spared the strain of ordinary class-books, and one which is of greater educational value, if not so convenient—an association in materials, the use of material, and the process of making material objects.

Space does not permit description of the cultivation of the artistic and musical powers of the children, or of the organization of drill and games. These are of great value.

**Occupations for the Short-sighted.**—In the sight-saving classes the children are taught to take care in the use of their eyes, and the same care is inculcated in the choice of an occupation when leaving school. Teachers ascertain the types of occupation carried on locally, and talk to the children about them. Outdoor work is most suitable, especially work which involves standing and moving, and a minimum of close eye work. Health improves with the freedom from confinement, and the eyes, as barometers of the body, benefit accordingly.

Attached to each London school there is an after-care committee, the voluntary helpers of which do much to direct the children into suitable work. The medical officer of the school indicates to the committee any particular disability of the child. Children whose sight is especially delicate are notified to the care committees which deal with the blind and partially blind. These committees endeavor to put them in touch with occupations which they can still follow should their sight get worse.

All the children in the classes are regularly examined by the school doctor—as regards both physical condition and the state of their eyes—and detailed records kept. Parents are encouraged to attend medical inspections, and periodically teachers invite parents to a reunion of the school, that they may be interested in the work of the pupils and may understand why such care is being taken of their children's eyes.

**The Higher Education of Myopes.**—The success of the sight-saving classes in the elementary schools led to the demand for similar facilities in the secondary and central schools. Some elementary school children who were myopes were of exceptional ability; some had gained scholarships, and it seemed both unfair and unwise to deny them the opportunities which were open to normal children. Six years ago myope classes were started in some higher schools of the London County Council; there are now five classes for 100 children. Parents are warned of the risks of strain, they agree to remove their children if signs of strain be found, and they are warned that these facilities should not be considered as a stepping-stone to clerical employment after school days.

Most children admitted at the age of 11 have myopia of 4 to 7 D in the better eye, a much lower degree than in children in the elementary myope classes. Education is in each case modified according to the eye conditions. Certain children are allowed to read books with clear print for short and stated periods each day; others with worse defects are allowed to read notes made with "bulletin" typewriters for a quarter of an hour twice a day. Children with high and progressive myopia are kept strictly to myopic regulations; they do not read, but are read to by others. At three of the classes myopes are taught "touch" type-writing. The ribbon of the machine is removed, and two sheets of paper with an intervening sheet of carbon paper are inserted. The upper sheet shows no printing, the lower sheet, invisible to the child, receives the impress of the type. The results of these classes are, on the whole, good. The myopia often remains practically unchanged over a period of years, and at the age of 16 or 17 selected pupils are allowed, under sight-saving conditions arranged with different examining bodies, to sit for leaving examinations, in which they generally do well. The mean average increase of myopia per annum has been about 0.2 D. Much trouble is taken by the staffs of the different schools to obtain suitable occupation for these myopes. Many take up some branch of salesmanship; others train in pharmacy, domestic science, farming, nursing, massage, or commercial travelling. Notwithstanding these efforts, nearly one-fourth have taken up unsuitable work, although the number who do so is decreasing.

In the myope classes in the higher schools there are no children with scarred eyes or congenital defects—all are high myopes.

**Conclusion.**—That these sight-saving classes, or myope classes, do meet a real need in the modern school system is certain. Thirty years ago ophthalmic surgeons were wont to forbid school to their highly myopic patients; now they refer them for admission to a myope class, or, if one of these is not available, the parents are instructed in the simple principles which underlie these sight-saving classes. The work is found to be as practicable for home use, or for exceptional use at an ordinary school, as it is under the organized conditions of the London schools.

## History and Development of Sight-Saving Classes in the United States

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Into the foundation of any great building, whether it be an actual architectural structure, a progressive movement or a cause, are woven the thoughts and ideals of thinkers living in advance of their times. Those in the United States interested in the development of special educational advantages for partially seeing children are ever mindful of the fact that, away back in 1802, Franz von Gaheis of Austria not only recognized the need of special education for this group, but suggested definite ways in which such opportunity might be offered. As far as is known, he was the first to recognize that partially seeing children were quite as much misfits in schools for the blind as in those for the normally seeing. Later, Maddox and Bell, in England, came to the same realization and laid the foundation of the schools for myopes in that country, the actual establishment of which was due to James Kerr and Bishop Harman. In 1907 Levinson called attention to the necessity for special schools in Germany. So far as is known, the first classes were established in England in 1908. Strasbourg established classes in 1911.

It was from these myope schools that the United States received its direct inspiration. History repeats itself. Over a hundred years after the recognition by von Gaheis of the undesirability of attempting to educate partially seeing children with those who were blind, Edward E. Allen, superintendent of Perkins Institution for the Blind, in the United States, came to the same conclusion through actual experience in his own school. On a visit to England, in 1909, he learned of the myope schools recently established there and, after studying their

methods of carrying on the work, felt that he had found a solution for his own problem.

It took considerable time to convince educational authorities in the United States that special opportunities were necessary for partially seeing children, but due chiefly to Dr. Allen's efforts, a class was established in Boston, Massachusetts, in April, 1913. In September of that year, through the efforts of Mr. Robert B. Irwin, a second class was established in Cleveland, Ohio. From these two classes have developed the 409 classes in existence in the United States in September, 1932, representing 118 cities and 22 states.

These classes are now so generally accepted as a part of the educational system that the period of fundamental experiment may be said to be of the past. But it must always be borne in mind that every class, of whatever type, should be a laboratory out of which may evolve things of greater worth. In this sense, classes for partially seeing children will always be experimental; in the methods presented in this paper for administering and teaching such classes, there is no assumption that what has been decided upon as best for today's needs may be considered desirable to meet the changing attitude of tomorrow.

**Nomenclature.**—Probably a phase in the attitude toward this type of education may be noted in the change of name. Since the classes in the United States from the beginning offered opportunity not only to myopes but to those suffering from other types of eye difficulties, the British appellation of "myope school" was inapplicable. The first classes were known as "classes for the partially blind." The term, however, was soon abandoned, since it laid emphasis on the negative side. A special effort was being made at that time for conservation of natural resources, hence the term "conservation" was in very general use. Thus the classes for partially seeing children came to be known as "conservation of vision classes." This was later discarded in favor of a simpler term, "sight-saving classes." These classes have come to be recognized as a very important part of a national movement for conserving sight and preventing blindness, a movement quite separate from welfare work for the blind and also separate from the education of blind children.

**Candidates for Sight-Saving Classes.**—The first step for any community considering the establishment of sight-saving classes is to determine which pupils are candidates and whether there are in the community enough children to warrant the establishment of a class. In the United States each state has the right to make its own educational laws; hence, so varied are the standards in different communities regarding the partially seeing child, that one eligible for a sight-saving class in one state may be ineligible in

another. Many efforts have been made to reach common ground. This, however, is the more difficult because of the nature of the problem. Two children having the same degree of low visual acuity may react quite differently to visual impressions. One may be able, through experience, so to interpret his visual impressions—however indistinct these may be—that he can carry on his work in a sight-saving class; the other, through lack of such ability to interpret, may have to use the sense of touch as his chief avenue of educational approach.

The great stumbling block, however, is the question of myopia. So diverse are the opinions among ophthalmologists regarding this eye difficulty, that the educator is quite at a loss to know whether a child with myopia should or should not attend the sight-saving class. Since the decision of candidacy must, therefore, rest with the ophthalmologist and be considered an individual problem, the school physician and general practitioner are concerned to know which children should be routed to him for this final decision.

At the University of Chicago a meeting of ophthalmologists and educators was called to suggest guides for routing children to ophthalmologists. The following broad program was decided upon:

1. General statement: Children having a visual acuity of 20/70 (6/21) or less in the better eye after proper refraction. In addition, the following are recommended as potential candidates:

- A. Children in elementary schools having four or more diopters of myopia.
- B. Inactive, subsiding (or regressive) cases, such as interstitial or phlyctenular keratitis, optic neuritis, trachoma, etc., in which some irritation may be present, provided the approval of the attending physician is given.
2. All cases must be considered individually.
3. Any child who in the opinion of the ophthalmologist would benefit by assignment to a sight-saving class, subject to suggestion for treatment and training by such ophthalmologist, and the acceptance of the educational authorities having charge of such classes.
4. It is assumed that all the children assigned to sight-saving classes have average normal mentality.

Since children with a visual acuity of less than 20/200 (6/60) will, in all probability, be unable to use sight-saving class equipment, they are recommended for braille work.

**Proportion of Children Requiring the Advantages of a Sight-Saving Class.**—In the United States, the most conservative estimate of the proportion of children requiring the advantages of a sight-saving class

is one in a thousand of the school population. However, in those states and cities that have most fully developed this type of education, the proportion more nearly approximates one in five hundred of the school population.

**Ophthalmological Care.**—Educational authorities must necessarily take care of the routine placement of children with seriously defective vision. But it becomes the duty of the ophthalmologist not only to decide upon the candidacy of pupils and, if glasses are necessary, to check up on the prescription, but to see that records are prepared and that copies of these are made available to the educational authorities, so that teachers may be conversant with the type of eye difficulty with which they may have to deal. Such records state the time of the next examination and make recommendations for the amount of close eye work. In many cases, in addition to the work already mentioned, ophthalmologists visit sight-saving classrooms from time to time to see the actual conditions under which the children are working and to assist the teacher in carrying out instructions.

In the United States ophthalmological care is provided in various ways: private physicians, ophthalmologists of the board of education or the board of health, and private agencies.

**Administration.**—When candidates have been decided upon and the need for a class demonstrated, consideration is given to the selection of a school building. Since children eligible for sight-saving classes are social beings, great thought is given to see that they have the opportunity of mingling, as much as possible, with their normally seeing companions. It is felt that segregating them in a group by themselves without such opportunity for contact may add another handicap—that of social disability.

Hence, by the method pursued in 90 per cent of the classes in the United States, these children are placed in special sight-saving classrooms where, under the direction of a trained teacher who follows the recommendations of the ophthalmologist, they take all work requiring close use of the eyes. They join their normally seeing companions for oral work, rote singing, music appreciation, dramatic work, and other activities that are decided upon in a co-operative program.

The proportion of children needing this type of education is so small, in comparison with the general school population, that one class must, of necessity, serve a district or community. For this reason, children of several grades or standards will be found in the one group. It is essential for the success of the class that a school be selected having the same grades or standards as those represented in the sight-saving class.

Since some children have to travel a great distance to reach the sight-saving class, the school selected is as centrally located as possible.

**Lighting, Decoration of Room, and General Equipment.**—It is evident that if a modern building can be selected there will probably be little necessity for remodeling, since decoration and lighting of most of the new school buildings much more nearly approximate the ideal for normally seeing children than in the past. In this particular, what is ideal for normally seeing children is likewise ideal for the partially seeing.

*Natural Lighting.*—Unilateral natural lighting, to the left of the pupils, is desirable, with glass area at least one-fifth—preferably one-fourth—of the floor area. Since the best light comes from the top of the window, the glass area reaches within six inches of the ceiling and the bastions between windows are as narrow as possible to prevent shadows. In order to prevent glare in the eyes of the children and on blackboards, windows are not placed nearer to the blackboards than seven feet. Surroundings likely to cause glare, such as whitewashed buildings, glass roofs, etc., are avoided. In temperate latitudes, east or west, or northeast or northwest exposures are usually selected, since these give a maximum of light with a minimum of glare. The natural light is controlled by two buff colored, translucent shades, placed on rollers near the center of the window so that one may be pulled up and the other down. Shades are made wide enough to avoid streaks of light at the side, and care is taken to see that there is no unprotected space between the rollers.

*Artificial Lighting.*—In the early classes in the United States artificial lighting was thought to be unnecessary, since it was planned that only oral work would be undertaken on days when the natural light failed to give sufficient illumination for eye work. It was soon discovered, however, that children would use their eyes. In a mixed group of four or five grades or standards, subjects that could be presented orally to the younger children were of little interest to the older ones. Plans were developed, therefore, to make available artificial lighting meeting the same requirements as natural lighting—sufficient illumination for the type of work to be accomplished, well diffused, well distributed and without glare. By no means do all the sight-saving classes in the United States approximate this ideal.

*Walls, Ceilings, Woodwork.*—The color of walls is determined somewhat by the climate. In temperate zones, light buff walls with white or cream ceilings have proved most satisfactory; they are not only cheerful but, what is of great importance, have an excellent reflecting value. A neutral tone of woodwork is used. In order to reduce glare to a minimum, all surfaces—walls, woodwork and ceilings—are in flat finish.

*Furniture.*—Rooms are equipped with a teacher's desk and chair and with adjustable, comfortable, hygienic seats and desks that lift to an angle, all in dull finish. It will be necessary to add closets large enough to hold material of greater proportions than that used in regular grades, a long table and chairs for handwork, and, in classrooms intended for young children, kindergarten tables and chairs, a sand table for project work, and one or two easels.

*Blackboards.*—Blackboards are, as far as possible, of good slate and are kept in condition by frequent cleaning and by refinishing when necessary. Blackboards in three parts, each of which may be pushed up or down, make it possible for the pupils to keep work on a level with their eyes.

The arrangements thus far mentioned as necessary for sight-saving class pupils differ little from those for the normally seeing.

*Reading Material.*—The procedure in the education of partially seeing children in the United States had to be developed by the trial and error method. It was soon discovered that, given sight, no matter how poor this might be, children would read. In consequence, some method had to be devised by which they could read with the least possible eye fatigue.

For very young children there were in existence large reading charts with clear, distinct letters. But for children even slightly more advanced, no material was available. Handmade charts came into use, printed with rubber stamp letters of large size. This proved not only most laborious work for teachers and pupils, but it was found that, even when the printing was done with painstaking care, the ink was likely to be uneven, making the result more or less difficult to read. It was also found that although spacing between lines could be regulated by an attachment on the easel on which the printing was done, it was most difficult to keep the correct spacing between letters and words. Usually, one or two children in the class proved able to do this laborious work better than others and, since too much of the teacher's time could not be devoted to the preparation of such material, if she were to accomplish all else required of her, this devolved upon the pupils who could do it best. For a short time this may have been good practice, but, after a period, there was no chance of further development, and the precision and length of time required to accomplish the work often caused a nervous physical strain.

There was also a second element to be considered. How were these children to know what to print? The teacher could not give the necessary time and attention to dictating the work, and, if material were pre-

pared by her for the children to copy, there was the strain of reading the original.

The outcome was the development of books in large, clear type, on buff colored paper. The selection of paper took into account the findings of illuminating engineers that black on yellow is more legible than black on white. It also took into consideration the opinion of some ophthalmologists that yellow is the most fatiguing color because it leaves the longest retinal image. A compromise was made by using enough yellow to help in legibility, but not enough to cause eye fatigue.

At first a 36-point type was used (letters  $\frac{1}{2}$  inch in size), but, after considerable research, it was found that the eye span is too short to make this size the most advantageous, and special books for sight-saving class children were thereafter printed in 24-point type (letters  $\frac{1}{3}$  inch in size). There has not been, however, a sufficient amount of research on this subject and there is no certainty that this type is the one which will continue to be used in the future.

For children with such low static vision that they must hold their material close in order to be able to see it at all, a type that includes more in the eye span may eventually prove more satisfactory.

*Writing Material.*—Again, in the early days, individual seat blackboards were used with chalk, but no one could work long with any group of handicapped children without discovering that their special difficulty may be a symptom of the general physical condition. Much use of chalk at such a comparatively close range caused irritation to the throat, and chalk dust, unsanitary for children in good general health, proved even more disastrous to those in poor physical condition. For seat work, therefore, large sized, buff colored paper and heavy-leaded pencils were substituted. Considerable work is still done on the large wall blackboards, since children get the benefit of change in position and eye focus and seem to be able to work at a greater distance from the board than when the boards are at the seats. Efforts were made to obtain a chalk in large size that would make a clear, heavy line. The chalk now used is Freart crayon about one inch in diameter.

In addition to general writing material, sight-saving classes in the United States are equipped with special typewriters, manufactured with a type as nearly as possible approximating that in their large type books. It must be emphasized that typewriting is never taught as a means of earning a living, but as a medium of written expression. Naturally the touch system is used, and just as soon as the mechanics of the machine are mastered, the children do their original work on the typewriter. This saves a very great deal of close eye use and, since the type is large

enough and clear enough for the children to be able to see without eye-strain, they may use their eyes for short periods to read what they have typed and to make the necessary corrections.

The preparation of original work on the typewriter builds up exceedingly good eye habits and, at the same time, imbues the child with the idea of doing well the first time whatever he is undertaking, thus avoiding copying and recopying of material. It has been demonstrated that even quite young children can be taught to use the typewriter.

**Division of Subjects.**—It has been stated that subjects requiring close use of the eyes are undertaken in the special class, and as many others as seem desirable with normally seeing children. In the first group of subjects are reading, writing and arithmetic. Two subjects not requiring close use of the eyes, handwork and typewriting, are included in this group—handwork because it is most difficult for teachers who do not understand the reactions of various eye difficulties to know what may prove harmful, and typewriting because this opportunity has not as yet been offered to normally seeing children in regular grades or standards and hence must be treated as a special subject in the sight-saving classroom.

The so-called social subjects—geography, history, natural science, appreciation of music, rote singing, etc.—may be taken with the regular classes, but the preparation for these subjects, such as maps without detail, fulfillment of reading assignments, etc., is done by the sight-saving class teacher. However, the teacher's work in this particular is being considerably lessened by the co-operation of map makers in putting out maps in clear outline with no detail.

**Illustrative Material.**—There seems to be no reason why children in sight-saving classes should be deprived of illustrative material. Large, clear pictures without detail, used with discretion, add greatly to the interest and development of the pupil.

**Material for Motivated Handwork.**—The modern method of handwork for all groups is applied in the sight-saving class. Handwork must have a place in the educational program, and in the sight-saving class it must meet certain requirements: it must be an eye rest; it must be motivated; it must help to satisfy the creative instinct; it must arouse in the pupil so much interest that he will be glad to substitute it at home, as well as in school, for similar activities requiring close use of the eyes.

**Educational Opportunities for Partially Seeing Children in Secondary Schools.**—In the United States secondary schools are divided into two groups—junior high schools and senior high schools. In the experimental days there was no thought of offering partially seeing children education

in secondary schools. One reason was that methods of carrying on this work, before secondary education could be considered, had to be developed in the elementary school. The real reason, however, lay deeper. It was current opinion that, because of the seriously defective vision by which pupils in sight-saving classes were handicapped, they should not be educated beyond the elementary school level. For some time, so tacit was the acceptance of this opinion, that higher education for these children was not even a moot question, except to the individual teacher who saw the need for some action, especially in the case of myopic children. Not only did these children seem to present greater intellectual ability than any other particular group, but the very fact that their eye condition prevented them from joining in the majority of outdoor games tended still further to make them studious, since they were likely to fall back upon the things they could do, however injurious these might or might not be to their sight.

It became evident to the thoughtful teacher that some children would continue their studies whether or not provisions were made for them, and that it would be much better to have them do so under correct conditions than under haphazard ones. Hence, many teachers took upon themselves the added burden and responsibility of keeping such children in their sight-saving classes after they had completed the work of the elementary school, preparing for them an enriched curriculum and, in some instances, giving them the actual work undertaken in junior and senior high schools. As the group needing this assistance grew larger, it became evident that better arrangements would have to be made for both pupils and teachers. The next logical step was to arrange for the education in junior high schools of graduates of elementary schools.

Much consideration was given to what arrangements would prove best. It was thought by some educational authorities that, since these children had from the time of their entrance into a sight-saving class been imbued with the idea of using the best method for taking care of their sight, they should be able to take the responsibility upon themselves in the junior high school. Others argued that children of junior high school age were altogether too young to assume such a burden of responsibility. The outcome was that, wherever possible, junior high school classes were established and placed under a trained teacher, the same methods being used as in the elementary school, except that the responsibility was gradually shifted from the teacher to the pupils.

In the junior high schools, the assignments in reading and for general preparatory work are so much greater than in the elementary schools that it soon proved impossible for the teacher to read for each pupil those

assignments not in large type. The plan of employing student readers was worked out and is being used in a number of places. According to this plan, student readers are selected from pupils in the regular grades who are doing the same work as the sight-saving class pupils. Instead of reading assignments to themselves, they read them aloud, either in study periods or by special arrangements after school hours. All work, however, is done in the school building under proper conditions, so that, when sight-saving class pupils and their readers leave, all preparation has been completed for both groups. Naturally, pupils well up in their subjects are selected as readers.

Eventually, a time came when graduates of sight-saving classes in junior high schools presented the problem of how they were to obtain the more advanced educational opportunities offered in senior high schools. To solve this new problem some cities established sight-saving classes in the senior high schools and conducted them in a manner similar to those in the junior high schools. But the majority of educators felt that it was time for these pupils, many of whom had had nine years of sight-saving class training, to assume the responsibilities that sooner or later would fall to their lot.

Hence, in the majority of cases, two high schools are selected in different parts of the city and graduates from junior high schools are allocated to them, entering these high schools as do all other high school pupils, except that an adviser—a supervisor, a sight-saving class teacher, or a senior—is appointed to help in the selection of courses, to make the necessary contacts with teachers, and to arrange for student readers. Since all freshmen are new to the building, it is necessary to select readers before the close of the previous school year; and usually those readers who have proved efficient in junior high school work are the ones selected.

By the time sight-saving class pupils enter senior high school, they should be so proficient in typewriting that they are able to prepare all their written work directly on this machine. A special portable typewriter has been designed for their use and many of them are permitted to take such typewriters into the lecture rooms and make their notes directly on them. Another important innovation is that these students are permitted to take all their examinations directly on the typewriter, the questions being prepared beforehand in large type.

**Provision for Partially Seeing Children in Vocational Schools.**—There will be found among sight-saving class pupils, as among those in regular grades, motor-minded children who must be given opportunities for vocational training. In America a few states are attempting to offer such training in a very limited way. Much research is necessary to find

what occupations can be safely carried on and, at the same time, offer opportunity for employment.

**Opportunities for Partially Seeing Children in Rural Communities.**—A scattered population makes it well-nigh impossible to gather together a sufficient number of children in any one rural district to warrant the establishment of a sight-saving class. A few states that have established classes in cities have occasionally made arrangements for rural children to be boarded in the nearest city having such classes.

In some instances, where transportation facilities are good, a community class has been established. A greater understanding of the sight-saving class movement has caused teachers in country schools, where there may be a partially seeing child, to reach out for such information and help as will enable them to give the child as much assistance as possible in carrying on the work in the rural school.

**Methods of Administering, Supervising and Teaching Sight-Saving Classes.**—*Administrative Direction.*—In states where there is a state director of special education, the administrative direction centers in his department. Such administration concerns itself with the arrangements for obtaining and administering the budget and with laying down conditions under which state aid may be granted; certificating of teachers according to the provisions of the educational law of the state; inaugurating of training courses for new teachers, to meet the state regulations; stimulating the formation of new classes throughout the state, particularly in those places where there are no local supervisors; establishing county classes and making other arrangements for the education of rural children needing this type of specialized education.

There are comparatively few cities that have a sufficient number of sight-saving classes to warrant the appointment of a supervisor who shall devote entire time to do this work. The majority of sight-saving classes are under the direction of a supervisor of all kinds of special classes. Unless such supervisors are specially trained to understand this particular type of education, the results are often unsatisfactory.

Some states have solved the problem of supervision by dividing their territory into two or more sections and appointing supervisors experienced in this work to travel from one city and class to another.

*Teaching of Sight-Saving Classes.*—There are no courses of study specially prepared for children in sight-saving classes; the object always kept in view is to conform as nearly as possible to the work undertaken in the regular grades. There are two reasons for this. These children are mentally as able to undertake the work as are normally seeing children. About four and one-half per cent of the pupils in sight-saving classes are

able to return to regular grades and would be at a great disadvantage if they had been pursuing a different curriculum.

It is the adaptation of the work that is important. With the exception of a very few subjects, the regular school curriculum is followed and the same work is undertaken in the special class as in the regular grade. Where any change is made it is in the nature of a substitution or modification, rather than an omission. Thus, eye fatigue may occur in detailed drawing, but no child is deprived of the chance of illustrating his story by original work because he is not permitted to draw. He may accomplish the same result by free-hand cutting, by modeling, by a sand table project, or by mass painting. Likewise, no child is deprived of map work in history or geography just because he cannot use the maps provided for normal eyes. His map consists of an outline form, black on buff, or buff on black, or in colors sufficiently contrasted to produce the result of clear outline. There are few, if any, names printed on this map; a plan is used by which special projects are carried out one at a time; a key to names may be given in large type on the opposite page.

In a few cities music scores are permitted if they are in large type, but, in the majority of cases, lessons in music are confined to appreciation of music and rote singing. Where a child shows a decided talent for music—instrumental or vocal—special attention is given to him; and efforts are made to provide training under conditions suited to his special needs as a sight-saving class child.

**Qualifications for Teachers of Sight-Saving Classes.**—Since the work of sight-saving classes is carried on as nearly as possible like that of regular grades, it is essential that teachers of these classes have the fundamental qualities and educational training of any good teacher. It is further essential that they undertake special training for the particular work of teaching a sight-saving class.

There are many reasons why a teacher contemplating specialized work, such as teaching a sight-saving class, should have considerable experience with the normal group. Just so far as it is possible, the education of the handicapped runs parallel to that of the normal. A teacher who does not carry into specialized work the normal attitude, or who becomes so engrossed in her own special work that she loses sight of the normal, is likely to add handicaps to those that already exist in her group.

In sight-saving classes, since several grades or standards may be and usually are represented, a teacher should have experience in teaching more than one, so that she will not have to make too many adaptations to new conditions all at one time. On the other hand, a teacher who remains too long in regular work before undertaking new lines of specialized

education is likely to find it difficult to make adaptations to conditions differing from those to which she has become accustomed. Successful teaching in regular grades for at least three, preferably, five years should lay a good foundation and help the teacher to keep the normal viewpoint.

**Special Courses of Training.**—By special training is meant training that bears a direct relationship to the work of teaching a sight-saving class. There is a diversity of opinion as to what this special training should include. Since it is often difficult for a teacher to take a full year, in addition to her fundamental training, to prepare for special work, several universities in the United States offer summer courses of six weeks' duration. This may appear a very short period in which to prepare for so important and arduous an undertaking, but a perusal of the work required shows that a real effort is made to give a good foundation.

The student is required to give her entire time for the six weeks' period. The work is divided into four parts: a course on the anatomy, physiology and hygiene of the eye; a course on administration and organization of sight-saving classes; a course on special methods of teaching sight-saving classes; and attendance for observation and practice teaching in a demonstration sight-saving class and at an eye clinic. Since an understanding of eye conditions is essential for carrying on this work successfully, the greatest emphasis is placed upon this section of the work. Only those teachers are eligible who meet the fundamental requirements, hence they are more or less familiar with the physiology of the eye, so that but a brief review is necessary.

Thirty lectures are given, in particular, on refractive errors and common eye diseases likely to be encountered in the sight-saving class. At least twenty hours are spent in an eye hospital or clinic where cases are seen and discussed with the ophthalmologist who conducts the clinic. The clinic usually affords the opportunity to see one or more operations, since the actual knowledge of how, for instance, a cataract may be removed can be gained much better by seeing the operation performed than by reading about it. Thirty lectures with discussions are given in the organization, administration and conduct of sight-saving classes. Thirty lectures with discussions are given in methods of teaching sight-saving classes. Students are required to spend thirty hours in the demonstration classroom to observe methods employed and the various reactions of the children; in addition, some practice teaching is done. Personal conferences with the students are held by the instructor and further opportunities are offered for general discussion.

But just as education is a continuing process in all groups, so in sight-saving class work teachers are urged to take supplementary courses

from time to time, to keep up with modern methods. In many instances, teachers are required to do this in order to obtain advances in salary.

**Financing Sight-Saving Classes.**—The State makes education compulsory. Such a regulation can be enforced only when education is offered in a form that can be assimilated. Hence, it is only reasonable that the State assume its share in making education possible for all children. Fourteen of the United States have assumed this obligation. The provisions for giving financial aid vary according to the educational laws of the state. Such provisions may take the form of: (1) the appropriation of a per capita amount; (2) the appropriation of a general sum for the establishment and maintenance of classes, the distribution to be made by a specified educational department; (3) an appropriation to cover a part or all of the teacher's salary; (4) a combination of two of the above.

Of the various methods presented, the per capita method has proved the most successful, since, unless otherwise specified, the director in charge of administering the funds may use discretion. A class which is being established needs a large outlay for equipment, whereas a class that has already been equipped has to meet only current expenses, including some additional equipment, such as paper, pens, pencils, etc., and the replacement of worn-out material. It is evident that it is possible, under a per capita or even under a general appropriation, to provide for supervision—either whole or part-time, according to the needs—and to pay for student readers for junior or senior high school students.

**Justification.**—It would seem almost unnecessary to have to justify the cost of the education of any child who is educable. Humanitarianism alone would seem a sufficient justification. Yet it must be remembered that the State is responsible to the taxpayers for the use of public moneys and that, in consequence, the State tends to look upon all education as an investment that will pay justifiable dividends.

The object in educating partially seeing children is the same as in the education of any group—to prevent illiteracy and so to develop the innate powers of the individual that he will not become a liability but an asset of the greatest possible value to the State. This aspect of education is being demonstrated more and more by the method of individual instruction that is being emphasized in advanced school systems, by which a child is developed along the line for which he has the greatest ability. To give a partially seeing child an even chance with the normally seeing to become an asset to the State, it is necessary to provide for him the opportunity to overcome his handicap. In order to do this, such educational facilities must be put at his command as will permit him to develop

along the line of his greatest strength, while his weakness, in so far as this is possible, is prevented from getting any worse.

It is obvious that such facilities cost more than those provided for the normally seeing. If, by providing them, the State is enabled to change potential liabilities into actual assets, no further justification is necessary.

**Ultimate Aim.**—Underlying all efforts for the education of partially seeing children there should be a never ceasing work of doing everything possible to make special education unnecessary by:

1. Prenatal and natal care.
2. Greater attention to the eyes of the preschool child.
3. More extended medical service for school children.
4. Improvement in school plants to produce the best environmental conditions.
5. Co-operative effort—medical, educational and social—to eliminate the causative factors of eye difficulties.

## Sight-Saving Classes in Germany

Professor Martin Bartels

Director of the Ophthalmological Clinic of Dortmund (Westphalia)

The fact that we are discussing today the problem of sight-saving classes at an international meeting will delight all those for whom this problem has been an outstanding preoccupation. Those who are well acquainted with the subject realize to what extent an international discussion may help them through a knowledge of the experience acquired in other countries. Countries which intend to organize these special classes will derive the greatest benefit from these discussions. The difficult point about this international discussion lies in the size of the problem considered as a whole. I have taken the liberty of bringing here a summary of the publications on sight-saving classes, in which I have made a special note of the papers which I thought most valuable; they amount to 142.

**The Necessity of Establishing Special Classes for the Partially Sighted.**—There are many arguments in favor of these classes. These children are behind their comrades in the ordinary classes. At Dortmund, of 56 partially sighted children who until then had followed the ordinary class, 26 were behind their comrades and had not been able to pass into an upper grade. Consequently, they suffered from an inferiority complex which was harmful to the development of their character. Moreover, their visual defect becomes aggravated if they attend the ordinary school.

On the other hand, the education of these children in institutes for the blind hinders the development of their sight and interferes with the education of the blind.

**For Whom is the Sight-Saving Class Intended?**—The sight-saving class is intended for:

1. The so-called partially sighted—children whose visual power, too weak for the ordinary school, too strong for the blind institute, enables them to learn to read and write. These children have a visual acuity which varies between  $2/50$  (0.04) and  $5/25$  (0.2–0.3). Exceptionally the inferior limit may be considered as  $1/50$  and the highest limit as  $1/3$ . One must take into consideration not only the visual power, but the physical and intellectual characteristics of the child, his home conditions, etc. . .

2. Children whose eyesight is threatened by disease or because of abnormality of the eyes.

- (a) Diseases of the eye: chronic inflammation of the anterior part of the eye, for instance, phlyctenular or parenchymatous keratitis (at Dortmund 10 per cent of partially sighted children are suffering from this trouble). Next come progressive diseases of the interior parts of the eye.

- (b) Refraction errors: the chief of these is myopia. I consider that only those children whose myopia between 6 and 8 years is 8 D. must attend the sight-saving class. Children with a lesser degree of myopia will only be exceptionally admitted to this class when a marked progressive tendency has been noted, as the result of heredity or direct observation.

In Anglo-Saxon countries, people go much further and children with  $-4$  D. of myopia are educated in the sight-saving class. We cannot here go into details. One is dealing with the much disputed problem of the influence of close eye work on the progress of myopia. It would be highly interesting to find out what influence the education of these children in sight-saving classes in England and in America has had on the progress of myopia.

Hypermetropia and astigmatism come next. I am of the opinion that the decision depends not on the degree of hypermetropia or astigmatism but on the degree of visual acuity. Finally, one is often tempted to send to the sight-saving class a child who suffers from asthenopia or visual fatigue. On the basis of my observations in cases of mental diseases, I think this is wrong.

As a matter of principle, only mentally normal children are admitted to these classes; otherwise, they would soon be discredited and number

among institutions for the feeble-minded. Parents would refuse to send their children to these schools.

The researches of Dr. Caesar (at Dortmund) have shown that the partially sighted are often physically as well as mentally below par. On the other hand, one often comes across high myopes who are physically undeveloped while their minds are very alert.

**Proportion of Partially Sighted Children.**—On the whole, in Germany, the figure amounts to 1 to 2 per 1000 school children, if one takes the above criteria as a basis. This figure is appreciably higher if one enlarges the recruiting field—for instance, if the upper limit of visual acuity is estimated at  $1/3$  or if myopes with  $-4$  D. are accepted.

**Detection of Partially Sighted Children and Their Admission to a Special School.**—The detection of partially sighted children is a vital question for the existence of special schools. Ophthalmologists and teachers must convince the education authorities of the need for these schools, if necessary, through a visit to a school established in another country. Then, these ideas should be brought to the knowledge of physicians and parents. Institutes for the blind are also approached. At the Congress of Teachers in Schools for the Blind, in Germany, it was estimated that one-fifth of the children attending these schools for the blind should have been educated in sight-saving classes.

At Dortmund, the child who goes to school for the first time undergoes a complete examination by the school medical inspector. If the latter notes a visual defect, the child is sent to an ophthalmologist, in order to ascertain whether he ought to be sent to a sight-saving class. The school physician also takes into consideration the physical and mental characteristics of the child. Above all, the parents must be persuaded that it is not dangerous for partially sighted children to cross the streets in order to reach the school building. Experiments regarding this have been carried on for some time in the great cities of Hamburg, Berlin and Dortmund. All partially sighted children have reached the school without mishap.

Elementary school teachers must examine the children from time to time according to a specified formula; in fact, the population of large cities is constantly changing and many children become partially sighted during the school period. Partially sighted children noted as such by the teacher are examined again by the ophthalmologist. It has been observed that approximately only 10 per cent of these children are suitable candidates for a sight-saving class.

Children suffering from eye diseases are hardest to detect. As English authors have remarked, these children often remain away from school;

there are cases, for instance, of children suffering from parenchymatous keratitis or scrofulosis, who may very well be sent, at least for a time, to the sight-saving school.

Until now, attendance at a sight-saving class has been optional. It seems time, however, to consider the possibility of making it compulsory, as is the case with blind children. In Germany, these latter must be educated in Institutes for the Blind.

All this applies chiefly to children living in large cities. In the country it is more difficult to undertake the detection and education of these children. First of all, school teachers should draw up statistics.

During the school period, partially sighted children are under the permanent control of an ophthalmologist acting jointly with the school medical inspector; they are examined at least twice a year and measures to be taken with regard to them are agreed upon. Children whose visual power has improved are sent back to the ordinary school; those whose visual trouble has become so aggravated as to need other methods of education are sent to Institutes for the Blind.

**Different Types of Sight-saving Classes.**—A distinction is made between: (1) Independent sight-saving schools; (2) sight-saving schools annexed to Institutes for the Blind; and (3) separate sight-saving classes in ordinary schools—sight-saving and myopic classes.

The last category has the advantage of bringing together partially sighted and normal children, some of the classes being held in common. The expenses involved are not so high as with independent schools. The methods followed in these classes are the same as in other sight-saving schools, but, as mentioned above, the children remain rather backward, a fact which gives rise to an inferiority complex.

Proper sight-saving schools, such as they exist in Germany<sup>1</sup> and Denmark are the only institutions which enable pedagogical methods to

<sup>1</sup> In Berlin there are actually three sight-saving schools, including 24 classes.

I have been able to collect accurate data only as regards the second school (Head Master Herzog). This school has received since its creation 350 pupils. Of this number, 216 have left school, 3 are dead, 6 have been transferred to the Institute for the Blind, 3 to a higher class, 28 have returned to the ordinary school. The children who have left school are employed in varied professions.

The sight-saving schools of Dortmund have received so far 58 children and include three classes. Of 25 children who have left school, 5 have returned to the ordinary school, 5 are in a charitable institution, 2 have been transferred to a higher class. Thirteen children have left school with the educational diploma of the normal school, 3 have left for another residence.

At Leipzig the sight-saving school only includes, so far, 16 children, as recruiting in the elementary schools is not organized. This school has received altogether since 1922, 29 children. Of this number one child has gone to the secondary school, one has been transferred to the ordinary school and one to the Institute for the Blind.

The boarding school for partially sighted children at Chemnitz-Altendorf, includes today 26 children divided into 3 classes, as well as a vocational section.

be accurately adapted to the sight of each child, so that the maximum result may be obtained.

One must have a knowledge of the difficulties which enable partially sighted children to be detected. These are organic visual defects and their consequences—visual laziness, wandering attention, fatigue, nervousness, debility.

In the ordinary school the teacher cannot give partially sighted children the attention they need, except to the detriment of other pupils. On the other hand, sight-saving schools can only be established in large cities.

In the province of Westphalia we have considered, together with the authorities, the question as to how we could help partially sighted children in rural districts. In America a scheme has already been drawn up in that connection. In Westphalia, as the result of several conferences with the legal and educational authorities and with the teachers in sight-saving schools and Institutes for the Blind, we have not been able to come to any definite solution, chiefly because of the financial aspect of the question. A well-equipped sight-saving school can only be established in cities of over 100,000 inhabitants. The teacher pays more individual attention to his pupils in the country than in the cities, and one might consider the possibility of entrusting him with the education of the partially sighted. But this involves a special pedagogical training which nobody could demand of all rural schoolmasters. If schools for partially sighted children in rural districts are established in a central situation, they will have to be under the supervision of a specialized teacher.

A certain number of children from rural districts actually go to the cities in order to attend the secondary school. One will eventually get over these difficulties which are mainly of a financial order.

If one wishes to detect partially sighted children in rural districts one must start by drawing up accurate statistics. This is evidently not easy. All schoolmasters in these districts are instructed to report children with eye disease or refraction errors. The latter are then sent to an oculist who is acquainted with the question of sight-saving schools; he sends the children to these schools when he deems it necessary.

With actual means of communication it will be possible to arrange school hours so as to enable children to be conveyed to the small town where the sight-saving school is situated.

The question of the boarding of partially sighted children is not easy to solve. In our country one tries to board children who come from a distance, with a family, a charitable institution or an orphanage. The solution is not above criticism; the best method is to entrust them to

reliable families.<sup>1</sup> One must insist on this point: the cost of education in a sight-saving school is far from being as high as the cost of education in an Institute for the Blind or in a poor law institution. This sum amounts annually per child to 450 marks in Berlin and to 485 marks in Dortmund, as against 137 marks in the ordinary school.<sup>2</sup>

The name given to these schools is not a negligible detail. Many parents hesitate to send their child to a myope school when the latter is called by such a name, as they easily get the impression that this means a charitable institution for feeble-minded children. This is why, at Dortmund, we have called our school the von Graefe School. For a similar motive, when the school has not its own building it should be placed in the same building as an ordinary school rather than next to a charitable institution. The number of pupils in a class ought to be ten, at the outermost fifteen, and classes are divided in the same way as in the ordinary school.

**Pedagogical Training.**—The recruiting and training of teachers are fundamental points. The best teachers in the ordinary schools must be selected. In America, satisfactory results have been obtained with rural school teachers, a thing which is easy to understand as these teachers are more used than those in the cities to look individually after the children. In Germany, the sight-saving school teacher must follow a course of one year's duration at the Pedagogical Institute in Berlin. His training includes child psychology, and psycho-pathology, the anatomy, pathology and hygiene of the eye, etc. The course is followed by practical exercises in a sight-saving school and, after a year, by a final public examination. This is the only method of training competent teachers

<sup>1</sup> The experience acquired at the Chemnitz-Altendorf boarding school is highly favorable. The headmaster, Mr. Mönch, writes to me: "Concerning the question as to whether the boarding school has given proof of its usefulness, I am happy to answer: yes. The majority of our children come from the Institute for the Blind. They are all brighter and greatly altered: they are more active, they work harder. Children who were considered as black sheep at the Institute for the Blind have become quite the opposite. Many parents have expressed their surprise and joy at the happy transformation they have observed in their children. My advice cannot be regarded therefore, as purely subjective."

<sup>2</sup> Educational costs in an Institute for the Blind are supported by the parents, the local authorities and the state. The parents and the local authorities pay approximately 500 marks a year. To this one must add the amount paid by the province, namely, 1000 to 1500 marks. It appears from the statements made by the supervisors of these institutes that approximately one-fifth of the children who live there are, in fact, partially sighted. A thousand marks could be saved for each of these children if he attended the sight-saving school, while living with his parents. Even if the child has to be boarded with another family the cost of his education will still be less than at the Institute for the Blind. Children who attend sight-saving classes to-day were sent, in former days, to the Institute for the Blind, since they could not be educated in the ordinary school. Education in a sight-saving class involves increased expenses only in appearance, if one adopts the point of view that, thanks to these classes, one brings up sighted citizens who are thus spared the sad fate of the blind.

for partially sighted children. I do not believe it is possible to get such a result with six-week courses as advocated in other countries.

It is likewise important to get future teachers acquainted with educational methods for the partially sighted, in teachers' training colleges.

Only those teachers who have received this long preliminary training will be able to undertake the education of truly partially sighted children. A special course of six weeks will no doubt be sufficient for teachers of schools intended in England and America for children suffering from a lesser degree of myopia.

**Situation of the School.**—The school must be situated in the centre of the town, near a tram station, and if possible, surrounded by a garden. The classes will preferably be oriented east and west.

**Lighting.**—It is preferable to work during daylight; otherwise lamps "in opalescent glass" at 2.5 metres from the ground, will be used. No supplementary lamp shall be allowed on the desks, except in certain cases when it is considered advisable.

**Seats.**—The standard seat used in Dortmund is satisfactory, although it needs a few modifications. The seat should be movable, adjustable, and for only one child.

**Program and Methods of Work in Sight-Saving Classes.**—The aim is the same in the sight-saving as in the ordinary class. Only one tries to secure it in a different way, in economizing the eyesight (reading and writing lessons must not exceed 10 to 15 minutes) and in using different methods and different school material. Teaching will be made easier through the use of optical devices, such as the magnifying glass ( $1\frac{1}{2}$ ); the cylindrical magnifying glass of Copenhagen and similar instruments are not permitted. The small telescope has not proved very useful because of its limited field of vision.

**Reading and Writing.**—The alphabet will be learned by touch, using large embossed types. Several methods are available; we use the following in Dortmund: large types of 10 centimeters cut out of cardboard and covered with material which the child learns to recognize by touch. Later one uses types in yellow material on a blue background, or black on yellow, capitals being 10 centimeters in size, small letters 6 to 7 centimeters. Punctuation marks measure approximately 1 centimeter. The child learns to imitate these letters with his hands. Later he will form them with small sticks, model them with clay and trace them in the air. Gradually he will be taught to identify smaller types.

The child then traces these letters on the blackboard with yellow chalk. Later he will draw the words in black letters on a white background.

Sight-saving class teachers do not agree as to whether the children

should write with or without lines. At Dortmund, lines are used only at an early stage; older children manage without them. The lines must be set at intervals of 15 millimeters, a margin being left at the sides.

For writing one uses a special kind of pen of different sizes, as well as pencils and white chalk. Yellow chalk is not used as it becomes greasy too rapidly; it is preferable to use white chalk. To start with, reading lessons are followed by writing lessons, as written types are similar to the printed types learned by the children. First one uses Spieser's type, later ordinary printing type.

The first reading books are the alphabet of the primary schools. These alphabets have the advantage of being printed in large type; moreover, they vary according to the district and, in consequence, are better adapted to the child's mental attitude. Besides these, the only books for the partially sighted which exist in Germany are the four books of the special schools of Hamburg. These books are of convenient size and are printed in various types. They have the drawback of not including enough paragraphs. Children get used gradually to smaller type.

It must be pointed out that German children must learn not only Latin type but also German type, which means four alphabets more than other children: large and small German print and large and small German writing type.

The weak point in the teaching of the partially sighted is the absence of books in the upper grades. Only in America has progress been made in this direction. That country has already published several useful books for the partially sighted; in Germany one has to be content with books in large type printed by various firms.

Books in braille have been published for the blind and it was decided at the Congress of the Blind in October that these books would be printed in types suitable for the partially sighted. The conditions such a book must fulfil vary according to the different grades; they are the following:

**Physical Characteristics of Sight-Saving Class Books.**—The pages must not exceed 20 centimeters in length and 10 centimeters in breadth to begin with—15 centimeters later. The text must not be continuous. There must be paragraphs to enable the teacher to show to each child how much he is to read. As partially sighted children experience great difficulty in finding their way in a book it would be better, in the beginning, to put a large figure on either side of each paragraph; in the same way the number of each page should be indicated with a large figure either above or below. Titles ought preferably to be short. The print must be in fairly large black type, not exceeding a given size, as the partially sighted child would not be able to grasp the whole word in his

visual field. Books should not be printed in a uniform manner but as it is done in Hamburg, in types of different sizes and different kinds. To begin with, one may use capitals of 12 millimeters, punctuation marks measuring 1 millimeter. For medium types, capitals should measure 5 millimeters—small letters 3 millimeters. The disproportion between capitals and small letters must be gradually attenuated. It makes reading much easier. Lines should be avoided and uniform punctuation marks should be selected, especially for beginners.

**Contents of Books.**—This is a difficult point. Some teachers believe that books in the primary schools should always show regional characteristics and be adapted to the atmosphere in which the child has lived. This is not a good solution financially, as one would be obliged to print different books for each district. The text of these books will be more monotonous, but one must consider that a child brought up in the mountains has no idea, especially in the beginning, of the sea, fish and steamships or sailing boats, just as a child brought up at the seaside has no idea of hilly landscapes. It is preferable that these books should deal with nature in general and include maps and stories adapted to each landscape.

Geographical maps may be drawn in a very simple manner. As regards other subjects, oral teaching is to be preferred as the sight is better spared in that way. Manual work, as well as games, modelling, gardening, plays a great part in the education of the partially sighted. Since the visual power is weaker in these children than in normal children, one must develop hearing and touch which will play a complementary part and not the chief part, as in schools for the blind. One will use, for instance, wall maps which will be embossed at first and, later, outlined in a large simple manner. One may use a projector which reproduces the enlarged picture of various articles. The wireless may prove useful.

**Fate of Children Who Leave the Sight-Saving School.**—When a child leaves the sight-saving school the question arises: What will become of him? The more gifted children will be able, as we have seen, to go back to the ordinary school or to pass into a higher grade. But the apprenticeship of a manual profession involves great difficulties. It would be necessary to institute to this effect a vocational school as has been done in Berlin.<sup>1</sup> In some cases the only solution available is to

<sup>1</sup> The vocational school in Berlin actually includes 4 classes for young men and 6 for young women, as well as a commercial section for both sexes.

Duration of hours of study: 6 to 8 per week.

Duration of apprenticeship: 3 years.

The teachers are no longer sight-saving class specialists, but commercial and industrial experts.

send these children to vocational schools for the blind, as craftsmen are usually not patient enough to teach their trade to a partially sighted person, even when this would be quite feasible.

**Conclusion.**—My report has brought to light the diversity and difficulty of many problems related to the education of the partially sighted. These problems are not purely ophthalmological and we must later bring into this discussion sight-saving class teachers who have a much wider experience in the subject than ophthalmologists. If I have succeeded in pointing out the data of this problem so as to facilitate our work, a step forward will have been made in the international effort on behalf of the partially sighted.

## Sight-Saving Classes in Switzerland

**Dr. Auguste Dufour**

**President of the Central Swiss Union for the Blind**

In 1915 the Central Swiss Union for the Welfare of the Blind which includes the chief institutions in this country dealing with blindness and its prevention, undertook a study of sight-saving classes. Ophthalmologists, and later, teachers were approached in order to obtain a preliminary census of partially sighted children in the cities. In 1917, a report was published and distributed in all the Swiss cantons to the educational authorities, physicians, inspectors, the teaching staff. This report was then discussed in a general assembly composed of all those to whom it had been addressed. A committee consisting of ophthalmologists, school medical inspectors and representatives of the Central Union, worked out a scheme for the establishment of these special classes. Addressed in May, 1918, to the school authorities in all Swiss cities, this scheme laid down the principles of this important new departure. The Public Education Department of the Canton of Zurich was the first to take this new idea under consideration and had it examined by the school authorities and the Institute for the Blind of the City of Zurich. Teachers' associations took up the matter.

In spite of all these efforts, it was only in the spring of 1925 that the first sight-saving class was opened in Switzerland—in Zurich, with 12 gifted pupils, belonging to the second and fifth years of the primary school, with a visual acuity below 0.2. Two years later, 18 children attended this class. This year, of 17,247 school children (for 250,687 inhabitants) 32 attend the two special classes; the primary and the upper class. They are all bright children; there are two teachers.

At Bâle, in 1929, 11,788 children from the primary and secondary schools were examined and only 1 per 1,000 was found to have definitely defective eyesight. In 1930 the first special class was opened with 10 pupils, having a visual acuity inferior to 0.5 after correction. In 1932 with 7,870 children attending the primary schools (for 148,063 inhabitants), the sight-saving class, supervised by two women teachers, included 12 children, aged 7 to 11 years.

In the two cities of Zurich and Bâle, the special teaching is given according to the principles laid down as early as 1918 by the Central Swiss Union for the Welfare of the Blind; these principles have acquired more scope and accuracy as the result of experience. They may be summarized as follows:

1. Sight-saving classes shall include children aged 6 to 14, normally gifted, whose visual acuity in the best eye, after correction, is below 0.2. Bâle accepts 0.5.

2. Admission will take place with the parents' consent, on the proposal of the teacher, of the school medical inspector and of an ophthalmologist.

3. The classes, which may not exceed 20 pupils, will be under the regular supervision of an ophthalmologist.

4. Teaching, adapted to the child's degree of development—individual teaching—will be mainly oral so as to spare the child's weak eyesight. While developing the sense organs one will endeavor to strengthen simultaneously the child's physical, intellectual, and moral condition.

In order to apply these principles this is how we proceed:

- a. Visual fatigue is carefully avoided by changing the lessons at frequent intervals; manual work, basket making alternate with reading lessons; oral lessons with writing lessons.

- b. The shape and relief of objects, geography, are learned by means of modelling with clay, of sand building.

- c. The walls of the schoolroom are specially well lighted and provided with blackboards; the children use these for their calculations, for writing in large type and for drawing in thick lines of different colors. As they are standing they are obliged to keep their heads and bodies upright. The seats are provided with backs; the desks, which are inclined, are fitted with individual blackboards.

- d. The copy books have well marked lines; those used for arithmetic have large square spaces; pens with a wide end are used; the child writes at a distance from the paper, without bending over it, letters and figures suitably spaced in large type. Books are printed in thick type; as this is not the case with all books, a magnifying glass or a telescope is used when reading the same books as in the ordinary school. Drawing is

done on an inclined surface with thick carbon pencils. Numerous demonstration charts help the pupils to note details, to look with accuracy.

e. In order to develop powers of observation, numerous practical demonstrations are given; they are completed by educative walks with orientation exercises, by visits to blind institutes, museums, where the shape of objects may be appreciated by touch.

f. Special attention is given to posture; there are daily gymnastic exercises.

g. One has observed that many partially sighted children who did not succeed in the ordinary class and were left behind by their comrades, were disappointed by their failure. They became discouraged by a sense of inferiority, and lost their will to learn, their zeal and their taste for work. One must stir up their pluck, renew their self-confidence, develop their soul.

All this necessitates, as will readily be understood, not merely special schoolroom material, but a particularly well selected and well trained teaching staff. This is all the more indispensable since these children, being of different ages and of different grades, form small groups of pupils who need, for each grade, a teacher who is not only the educator but almost the father of this small family. In fact, the training of this superior class of teacher requires a prolongation of their studies, increased expenses and adds to the difficulty of creating sight-saving classes outside large cities where the number of these children justifies this measure.

It has indeed been suggested that these classes might be annexed to institutes for blind children and the teaching entrusted to the professors of these institutes. But this has met with the insuperable resistance of parents who preferred to withdraw their children from the public school, place them in a private school, or take a tutor, rather than let them attend the school for the blind where they would have been labelled candidates for blindness. Sight-saving classes must therefore be established within the regular school, with well trained teachers. Even under these conditions, it has not been possible to get all parents to accept this separation of the partially sighted from their comrades; this is the main reason why the special classes of Zurich and Bâle include only a small number of pupils while the attendance ought to be much larger.

What ought to be done for partially sighted children who live in the country, the mountains or small localities, where it is not possible to hold special classes? The question is so far unsolved. One has considered boarding them in an annex to Institutes for the Blind or to a charitable institution. But the parents are absolutely opposed to this as they wish

on no account to send their children at a distance or to be separated from them.

Experiments carried out in Switzerland since 1925 have shown that, while it is necessary to consent to additional expenditure for a very small number of children, the results obtained are well worth it. While partially sighted children delayed regular teaching in their class and made little or no progress, their instruction has been greatly facilitated in the special schools. In a large majority of cases these pupils have been able to pass into a superior grade with but little difficulty. Their visual power has not been weakened, as certainly would have been the case in the ordinary school; in some instances it has even improved thanks to well applied eye hygiene.

But it is not enough to prevent a diminution of visual power, it is necessary to increase it. Unfortunately we still lack really effective methods for improving a weak or threatened eyesight. Further research is necessary.

It is not an easy matter to organize sight-saving schools; in a small country with 4,000,000 inhabitants like Switzerland, where there are but few important agglomerations, only two of these schools could be established. They still meet with many difficulties which the Central Swiss Union for the Welfare of the Blind which has already done a great deal for the prevention of blindness, will endeavor to overcome.

### **The Strasbourg Sight-Saving School—One of the Oldest Schools for Partially Sighted Children**

**M. E. Redslob**  
Strasbourg

In June, 1910, the Municipality of Strasbourg contemplated the creation of a school for partially sighted children. At that time the health of the children whom the State compelled to go to school was beginning to receive serious consideration. Gloomy old buildings, dismal and stifling, were pulled down. Palatial new schools, clean, attractive and well ventilated sprang up. Open air schools were established. School medical inspection was reorganized and developed. Specialists were included among school medical inspectors. It is no matter for wonder that in this humanitarian movement children with defective eyesight should have been given attention.

The original idea was to establish in Strasbourg, a school for children with defective hearing. These schools already existed in Berlin and its

suburbs, in Düsseldorf, Hanover and Mulhouse. From this to the organization of a school for partially sighted children the distance was short. In fact, provisions had already been made for a similar school at Mulhouse.

It was during the autumn of 1911 that the class for partially sighted children was definitely established in our city. Its organization was entrusted to a secondary school (Mittelschule) teacher and myself. Our aim was not to establish a kind of training school for backward children, but a special school, autonomous in spite of being included in the primary school system, one which, through its equipment and methods of teaching, would be particularly adapted to partially sighted children. At that time we knew of no other school of that kind which could have served as an example. The only sight-saving school, that of Mulhouse, was not, in fact, a special school. There had been gathered together, in the same class children with defective hearing and defective eyesight without any attempt to provide for them special methods of education. They had been brought together in order to segregate them from other pupils whose education they hindered. This school was later abandoned. It was undoubtedly a first step in the right direction.

As far as we were concerned it was our intention to give to these children the best education possible without damaging their weak eyesight. In fact, two problems had to be solved: one concerned hygiene, the other pedagogical methods. The first consisted in sparing as far as possible the diseased organ; the second, in adapting the teaching program to a defective eyesight, while attempting not to lower unduly the general education standard. Success depended on the intimate collaboration of the teacher and physician.

It was, above all, necessary to select a well lighted room, oriented to the east in order to get the advantages of diffuse daylight. The direct sun rays might hamper and dazzle these children while the use of roller blinds might considerably reduce the amount of light. The walls were painted in a light color in dull finish. For artificial light, which is necessary in our climate during the dark winter days, we adopted a system of lamps with diffuse illumination.

It was our duty to make the children's work as easy as possible. Since the beginning, I ordered special copy books differing from those usually employed, by their larger spacing and thicker lines. These copy books have been used for over twenty years. They have proved very helpful; there has been no reason to modify them. The children prefer them to other copy books; they less often overstep the lines; they write more quickly and they do not bend their heads over their paper so much.

Some of these copy books include pictures. We have often been asked for them. Unfortunately they are not on the market, they are the municipality's property.

In order to make writing easier and more legible we have used small nibs with a broad end.

To avoid tiring the children's eyes we have, from the outset, limited reading and writing to the indispensable minimum. The pupils do not write for longer than 10 to 15 minutes at a time. Writing is frequently interrupted by rhythmic exercises.

The same holds good for reading. It is considerably shortened and limited to 5 or 6 lines per lesson. To make reading easier, the teacher selects texts which have been previously developed and explained. Just as with writing, reading is frequently interrupted by rhythmic exercises, deep breathing movements, singing, or by the oral summary of the meaning of a statement. In this way, thanks to these various activities, the sight is never subjected to undue strain.

For a long time we have been anxious to publish a special book for sight-saving classes. Unfortunately, as ours is the only French-speaking sight-saving school, the sale of this book could never have defrayed the expense.

In ordinary schools the pupils write over, repeatedly, words which are difficult to spell. This practice which is highly useful and advisable for normal children must be rejected in the sight-saving class. In order to learn spelling the pupils use very thick letters cut out of the headings of daily papers, for instance. These letters are joined together to form the word. They are then glued to a piece of cardboard. Instead of printing type the pupils often use small sticks which they arrange in the form of the word.

Actual drawing is but little used. In order to become acquainted with the shape and appearance of various objects or of a group of objects, the more advanced pupils reproduce figures drawn on the blackboard by the teacher, with charcoal on white paper; they are then roughly colored; alternately the children draw on the blackboard with chalk. The blackboard is inclined so as to avoid convergent efforts. As the drawings in question are extremely simple the children can also imitate them with small sticks. One might think this only a game. It is by means of such games that the children acquire an idea of the shape and relative size of material things. In order to vary the figures as much as possible and to economize time we intend to use shortly a projection apparatus which will enable us to project on the screen a large number of letters, words and drawings. In this way the teacher will no longer be obliged to draw the figures himself.

In geography, we have from the beginning relegated maps to the background. The teacher draws sketches on the blackboard. The pupils reproduce these either on the common blackboard or on the individual blackboards fitted to each desk. Regional relief is represented by sand or clay modelling.

Always with a view to reducing writing as much as possible, elementary arithmetic is taught by means of large numbers cut out of daily papers or printed on special pieces of cardboard, by the grouping or combination of various objects such as nuts, matches, pebbles or buttons.

However, one must emphasize the fact that in order to avoid undue visual strain, oral teaching is of outstanding importance. The explanation of words, of sentences, the development of a subject, the descriptions made by the teacher, repeated or summarized by the pupil, come first. As the children's eyes have to be spared, their hearing and other senses are developed more fully. Owing to their deficiency, outside life is more or less shut to them. Therefore, their inner life must be developed as much as possible, by obliging them to think and to meditate. Narrations, elocution, the oral description of scenes experienced or made up—all these stimulate their minds and stir their imagination. Although reading is extremely limited, the pupils acquire by these methods a knowledge approximately equivalent to that which they would have gained in a normal class if their sight had been adequate.

Exercises with matches, letters, marbles, the cutting out of large letters from newspaper headings, are not merely intended to replace as far as possible the graphic representation of objects. They have the advantage of teaching these children to use their fingers, to develop their manual skill. It must not be forgotten that our school must prepare its pupils to earn their living under the best possible conditions. Their defective eyesight must be made good by greater dexterity, by a finer sense of touch. This is why manual work plays a great part in their education. The children are taught how to use tools, to make cardboard work, bookbinding, basket and wicker-work.

Lately we have taught them typing. At first the pupils have to read out the letters on the keys to know their position; gradually they learn to write without looking at them—automatically.

When the weather is fine the pupils work in the afternoon in a garden equipped by the municipality and learn gardening. Open air work is in fact highly beneficial to these children who are often debilitated and scrofulous.

Writing work at home is reduced to a minimum. It is optional and authorized only if lighting conditions at home are adequate.

We cannot, of course, go into all the details of teaching methods used in sight-saving classes. We may say that, on the whole, the methods we instituted at the initiation of the work have been but little modified. They have yielded good results. We have had the pleasure of witnessing abroad the creation of several schools which took ours as a model.

The question which comes next is: What are the results obtained by our institution? One must not forget that we are dealing with children who would be absolutely incapable of attending a normal class. When they left the primary school to come into our special school, most of them, at the age of eight or nine years, could neither read nor write. Thanks to the education we gave them, they have easily acquired the knowledge necessary to get along in life. Since its creation in 1911, 147 pupils have attended this school: 69 boys and 78 girls. Among the pupils who have left school 97 per cent are actually earning a living. When the children reach the end of their studies the teacher finds for them a post adapted to their degree of vision.

These are the occupations selected for our pupils:

| <i>Boys</i>                         |    | <i>Girls</i>             |    |
|-------------------------------------|----|--------------------------|----|
| Brush or wicker-work.....           | 18 | Shop assistant.....      | 15 |
| Gardener, agricultural laborer..... | 12 | Florist.....             | 13 |
| Messenger.....                      | 10 | Servant.....             | 12 |
| Manual laborer.....                 | 7  | Office work.....         | 9  |
| Warehouseman.....                   | 6  | Millinery.....           | 8  |
| Bookbinder.....                     | 4  | Packing.....             | 6  |
| Office work.....                    | 4  | Laundry.....             | 6  |
| Piano tuner.....                    | 2  | Cook.....                | 2  |
| Carter.....                         | 2  | Newspaper messenger..... | 1  |
| Packer.....                         | 1  |                          |    |
| Porter.....                         | 1  |                          |    |
| Street porter.....                  | 1  |                          |    |
| Teaching of the blind.....          | 1  |                          |    |

Our school must be regarded as intermediary between an ordinary primary school and an institute for the blind. As years went on some children who were being educated in such an institute were admitted and educated in our school. On the other hand, the sight of three of our pupils declined to such an extent that it was deemed preferable to transfer them to the Institute for the Blind.

You have in Paris, an admirable institution: the National Institute for the Young Blind. I know from the leaders of this that there are among these young people a number of partially sighted subjects who, to their detriment, are brought up like blind persons, while their education from a moral as well as a practical standpoint ought to be entrusted to a sight-saving school. It would therefore be advisable that such a school be annexed to this Institute.

We often receive letters from parents living in other parts of France, enquiring whether our school takes in boarders. Unfortunately it does not. But I believe that such a boarding school for partially sighted children might easily be annexed to that of the National Institute.

Who are the children who ought to be or who might be admitted to a sight-saving school? To begin with, we decided as a matter of principle to admit to this school any child whose visual power in the better eye did not exceed  $1/5$ . To these we have added children who, according to information given by the teacher, are unable to follow the classwork on account of their defective sight and those, who, owing to regressive diseases of the eyes, need special care and supervision. I understand that most sight-saving schools established in the meantime follow the same principle.

On the basis of the results obtained for over twenty years, I can assert that the creation of sight-saving schools is a necessity. It is true that they can only be established in large cities or in large communities, as experience has taught that the percentage of children who need this special education is approximately one per 1,000. The number of pupils in the primary classes of Strasbourg is just over 20,000. In fact, our school includes approximately 20 pupils. This figure will never be increased as teaching must be strictly individual; a teacher could not possibly take care of a larger number.

## Creation of a Sight-Saving Class in Paris

A. Monbrun

Secretary of the French Committee of the International Association for Prevention of Blindness

The interesting addresses we have just heard show the importance of the question of sight-saving schools, the efforts which have been made, and the fine results which have been obtained in Great Britain, in the United States, in Germany and in Switzerland.

Mr. Redslob has explained to us the organization and methods of the Strasbourg school.

As no institution of this kind exists in Paris, our Association intends to obtain from the public authorities the creation of a sight-saving class in this city. Our President, with all his authority and activity, has taken up this scheme.

One hundred and eighty thousand children attend the public primary schools of the city of Paris. Moreover the suburban communes of the Department of the Seine include approximately 200,000 children.

The Prefect of the Seine, to whom we beg to address our most grateful thanks, has very kindly welcomed Prof. de Lapersonne and myself. He has brought our cause to the notice of the General Inspector of Public Instruction and Director of Education of the Department of the Seine. We express here our gratitude to Mr. Grandjean, Inspector of School Hygiene, and to Madame Bonhomme.

It would be impractical to think of establishing a school in the centre of Paris for groups of children from several districts because of the distance which these small partially sighted children would have to cross before reaching the school, whatever arrangements might eventually be made for their conveyance. To establish the first class a well populated district must be selected where one would immediately and readily find a sufficient number of pupils living within a short distance from a school. This school must have, moreover, an available schoolroom so that the organization of the special class should not be delayed.

The schools of the thirteenth district include 14,000 children. There is an immediately available schoolroom. It is therefore possible to organize immediately in this school a sight-saving class. The children will have but a short distance to go to school.

The Minister of National Education, by a letter dated November 5, 1932, has authorized the Director of Education of the Seine to open this class. It will admit boys and girls, aged 6 to 9 years, and will be opened in a few weeks.

**Editorial Note.**—The program was followed by the showing of an American motion picture film on conservation of vision, and of slides depicting some of the work of the classes for the partially sighted in Dortmund. There was a most interesting exhibit of sight-saving class material from England, Germany and the United States. Miss Loretta Young, head mistress of the Sayer Street School for the partially seeing, in London, was responsible for the very fine exhibit of the English classes and gave explanations in French and English of the work of the classes and the media used.



